case ought to be respected, said the judge in the Mussani case, they did not need to be followed because there were distinguishable differences between the 2 cases. Indeed, a key factor in the Mussani case was that the sexual relationship was with a current patient. The case in PEI involved, among other things, the blanket prohibition against psychiatrists having sexual relationships with former patients as well as the issue of the length of time since the professional relationship had ended.

The issue of time is an important one. Though determining whether a patient is "current" or "former" would appear to be straightforward, the amount of time that has elapsed from the end of a professional relationship and the nature of the care that was provided are most certainly other factors that must be taken into account. That is, the Mussani case should not suggest that physicians can simply terminate a longstanding professional relationship with a patient in order to engage in a personal one. It is very possible that the courts will be asked in the future to decide at what point (and under what circumstances), ex-patients are capable of providing consent to a private relationship with their former physicians.

Lorraine E. Ferris
Associate Professor
Department of Public Health Sciences
Faculty of Medicine
University of Toronto
Toronto, Ont.

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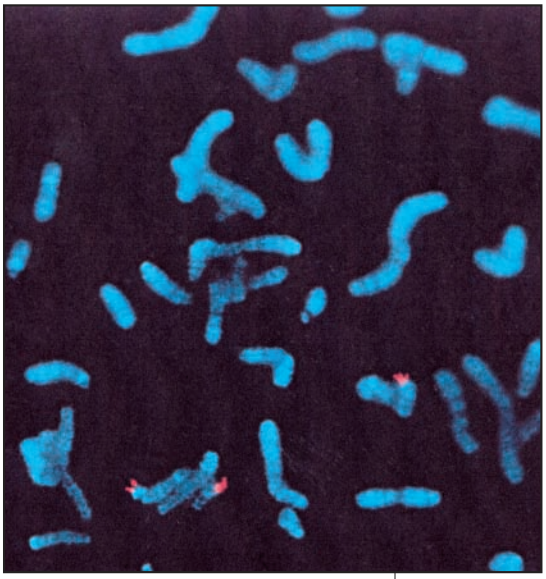
SCIENCE AND MEDICINE

Genetic profiling may offer insight into leprosy

Genetic profiling may help to define different clinical forms of leprosy. The severity of the disease depends partly on how an individual's immune system responds to the causative organism, *Mycobacterium leprae*. Tuberculoid leprosy is typically a self-limited disease with a low bacterial load. In contrast, patients who have lepromatous leprosy present with disseminated lesions and high bacterial loads, which reflects the suppression of cell-mediated immunity (see pages 55 and 71 in this issue).

To determine the reason for this difference in immune response, Bleharski and colleagues compared the patterns of expression of about 12 000 genes between patients with either form of leprosy. They demonstrated that there were clear differences in the expression of certain genes within the skin lesions between the tuberculoid and lepromatous groups. Specifically, they found an increase in the expression of type 2 cytokines in the lepromatous samples, which had been previously associated with immune suppression. However, they also discovered an increase in the expression of receptors in the leukocyte immunoglobulin-like receptor family. Hypothesizing that these receptors may also inhibit the immune response, they found that manipulating them with antibodies indeed resulted in an imbalance between the cytokines necessary for mounting an inflammatory response.

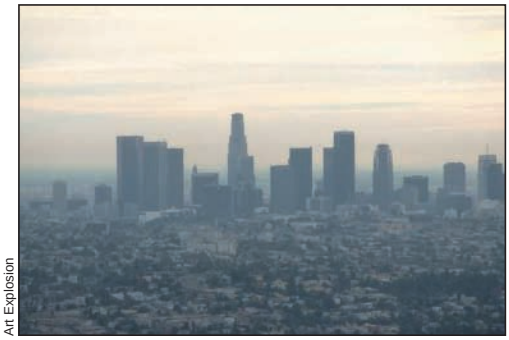
Within a larger context, the authors state that the importance of such findings indicates that genes involved in beneficial or maladaptive immune responses can be identified,



which may lead to a greater understanding of disease progression in general, and perhaps therapy. (Bleharski et al. *Science* 2003;301:1527)

Ozone linked to atherosclerosis

Ozone, better known in a stratospheric setting, may play a role in atherosclerosis. There is evidence that ozone may be produced in living organisms by the oxidation of water, a reaction that appears to be catalyzed by antibodies as part of an inflammatory response. Given that the formation of atherosclerotic plaques is now felt to be largely due to inflammation, Wentworth and colleagues attempted to elucidate whether ozone is produced during atherosclerosis in humans.



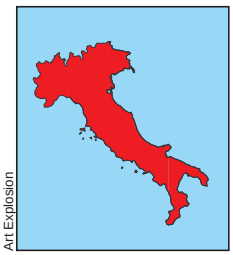
Art Explosion

Ozone is a highly reactive molecule that is difficult to measure. However, it is possible to measure the products that are created when ozone oxidizes other molecules. Furthermore, the oxidation of cholesterol by ozone results in products that are unique to ozone's reaction, thus leaving a biochemical "signature." Upon examining atherosclerotic plaques at the time of carotid endarterectomy, the authors confirmed the presence of these signature products within the plaque. They also demonstrated that, when the leukocytes within these plaques were activated in vitro, more of these signature products were generated.

These findings provide a possible link between the seemingly disparate factors that contribute to atherosclerosis: cholesterol accumulation, inflammation and cellular damage. The authors note that blood tests may one day replace invasive detection methods for arterial disease. (Wentworth et al. *Science* 2003; 302:1053)

Apolipoprotein A-I variant may clear atherosclerosis

A small community in northern Italy may help researchers learn how to combat atherosclerosis. About 40 people in Limone sul Garda possess a naturally occurring variant of apolipoprotein A-I. Although they have very low levels of high-density lipoprotein cholesterol, they enjoy greater longevity and far less atherosclerosis than expected given these levels. Researchers speculate that the variant protein (apo A-I Milano) promotes reverse cholesterol transport from existing atheromas. Indeed, a recombinant form of this protein has been shown to decrease atherosclerotic plaque burden in animals.



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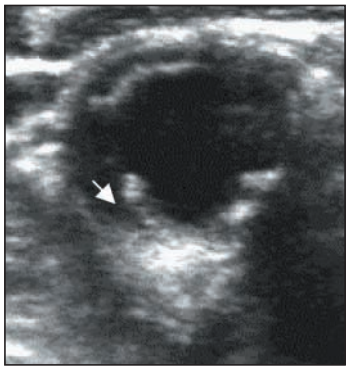

An atherosclerotic plaque

In a pilot randomized controlled trial, the recombinant protein was administered intravenously to patients with recent acute coronary syndrome. Using intravascular ultrasound to quantify atheroma volume, the authors found a statistically significant reduction in the size of coronary plaques after only 5 weeks of treatment compared with placebo.

Although very preliminary, the results challenge the notion that atherosclerotic plaques are relatively static entities requiring a mechanical intervention. Consistent with the analogy of a clogged drain, this protein may one day become the preferred liquid solution over the more painful and invasive plumber. (Nissen et al. *JAMA* 2003;290:2292)

— Compiled by *Allison Gandey*